The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARD OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte CHRISTOPHE LE ROY, JOACHIM MERZIGER, and JEROME PASCAL

Appeal No. 2005-2008 Application No. 09/777,012

ON BRIEF

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U.S. PATENT AND TRANFFORM OFFICE BOARD OF PATENT APPEALS AND INTERFERENCES

Before PAK, KRATZ, and TIMM, Administrative Patent Judges.

PAK, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. §134 from the examiner's final rejection of claims 21-22, 24-32, 35-37 and 39-49. Claims 23 and 38 have been allowed. See the Answer dated November 04, 2004, page 3.

APPEALED SUBJECT MATTER

The subject matter on appeal is directed to a composite structure for making tanks that transfer or store volatile fluids. See the specification, page 1. The structure comprises, successively, a high density polyethylene (HDPE) layer, a binder layer, an ethylene-vinyl alcohol copolymer (EVOH) layer, and a polyamide and polyolefin mixture layer. See the specification, page 3. Further details of this appealed subject mater are recited in representative claim 21, which is reproduced below:

- 21. A structure comprising, successively:
- a first layer of high density polyethylene (HDPE)
- a layer of binder,
- a second layer of an ethylene-vinyl alcohol copolymer or of a mixture based on an ethylene-vinyl alcohol copolymer, and
- a third layer of a mixture of a polyamide (A) and a polyolefin (B), wherein polyolefin (B) comprises;
- (i) a high density polyethylene, and either
- (ii) a mixture of a polyethylene (C1) and a polymer (C2) selected from the group consisting of elastomers, very low density polyethylenes and ethylene copolymers, the mixture (C1) + (C2) being co-grafted with an unsaturated carboxylic acid,

or, a mixture of:

- (ii) a polymer (C2) selected from the group consisting of elastomers, very low density polyethylenes and ethylene copolymers, the polymer (C2) being grafted with an unsaturated carboxylic acid, and
- (iii) a polymer (C'2) selected from the group consisting of elastomers, very low density polyethylenes and ethylene copolymers.

THE PRIOR ART

The examiner relies on the following prior art references:

| Zhang et al. (Zhang) | 5,516,583 | May 14, 1996 |
|------------------------|-----------|---------------|
| Hughes et al. (Hughes) | 5,705,565 | Jan. 06, 1998 |
| Melot et al. (Melot) | 5,998,545 | Dec. 07, 1999 |
| Hata et al. (Hata) | 6,033,749 | Mar. 07, 2000 |

Beuzelin et al. (Beuzelin) (Published UK Patent Application) 2 288 177

Oct. 11, 1995

REJECTION

The claims on appeal are rejected as follows:

- I. Claims 21-28, 31-32 and 38-46 under 35 U.S.C. § 103 as unpatentable over Beuzelin in view of Hughes;
- II Claim 29 under 35 U.S.C. § 103 as unpatentable over Beuzelin in view of Hughes, and further in view of Zhang;
- III. Claims 30 and 35-37 under 35 U.S.C. § 103 as unpatentable over Beuzelin in view of Hughes, and further in view of Melot; and
- IV. Claims 47-49 under 35 U.S.C. § 103 as unpatentable over Beuzelin in view of Hughes, and further in view of Hata.

OPINION

We refer to the brief and the reply brief and to the answer for a complete discussion of the opposing viewpoints expressed by the Appellants and by the Examiner concerning the aforementioned rejections. For the reasons set forth in the briefs and below, these rejections cannot be sustained.

As evidence of the obviousness of the subjected matter defined by the claims on appeal as represented independent claim 21, the examiner relies on the combined disclosures of Beuzelin and Hughes. The examiner asserts (Answer, pages 4-5):

Beuzelin et al disclose a structure comprising, successively, a first layer of high density polyethylene, a layer of binder, and a second layer of ethylene vinyl alcohol (page 13, line 11 and lines 16 - 23); the binder is a polyolefin comprising high density polyethylene and low density polyethylene (page 9, lines 7 - 19) grafted with an unsaturated carboxylic acid (page 5, lines 1 – 29; page 6, lines 1 - 4), and the structure comprises a third layer of binder (page 13, line 11); the structure therefore comprises a third layer of a mixture of high density polyethylene and low density polyethylene. Beuzelin et al fail to disclose a third layer which is a mixture of a polyolefin and a polyamide.

Hughes et al teach that a composition comprising high density polyethylene and a low density polyethylene (column 5, lines 8 - 9) is used interchangeably (column 5, line 7) with a composition comprising high density polyethylene and low density polyethylene and polyamide (column 5, line 22) as a binder layer (tie layer; column 6, lines 6 - 10) between high density polyethylene and ethylene vinyl alcohol (column 6, lines 6 - 10) for the purpose of obtaining a binder having desirable adhesive properties (column 6, lines 6 -10). Therefore, one of ordinary skill in the art would have recognized the advantage of providing for the mixture of polyolefin and a polyamide in Beuzelin et al, which is a binder layer, depending on the desired adhesive properties of the end product as taught by Hughes et al.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a mixture of polyolefin and a polyamide in Beuzelin et al in order to obtain a binder having desirable adhesive properties as taught by Hughes et al.

However, the examiner's assertions are flawed. The examiner has not established that the combined teachings of Beuzelin and Hughes would have suggested the employment of a mixture of polyamide and polyolefin as a third layer of a composite structure. As acknowledged by examiner (Answer, page 5), "Beuzelin et al fail to disclose a third layer which is a mixture of a polyolefin and a polyamide." Although the examiner relies on Hughes, column 6, lines 6-10, to remedy this deficiency, Hughes does not teach or suggest employing a layer containing a mixture of polyamide and polyolefin as a third layer of a composite structure. Specifically, Hughes only teaches that grafted linear ethylene polymers "are useful as tie layers in various packaging applications, e.g. tying another polyolefin to polypropylene, polyester, polyamide,

EVOH, paperboard, foil, etc." (See column 6, lines 6-9). The relevant portion of Hughes relied upon by the examiner does not teach employing a mixture of polyamide and polyolefin as a binder (tie) layer as alleged by the examiner.

Even were we to agree with the examiner that Hugh teaches such a binder layer, the substitution proposed by the examiner would not result in the composite structure as claimed by the appellants. At best, the combination as advanced by the examiner would have suggested placing this binder layer between the HDPE and the EVOH layers. Such binder layer would not be placed in the claimed location (as a third layer).

Since the examiner does not rely on the other cited references of record to teach the above deficiencies, we determine that the examiner has not demonstrated a *prima facie* case of obviousness regarding the claimed subject matter within the meaning of 35 U.S.C. § 103.

CONCLUSION

For the reasons in the brief and above, we cannot sustain the examiner's Section 103 rejections. The decision of the examiner is reversed.

REVERSED

| CHUNG/K. PAK Administrative Patent Judge |) | |
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| PETER F. KRATZ Administrative Patent Judge |)))) | BOARD OF PATENT APPEALS AND INTERFERENCES |
| CATHERINE, TIMM Administrative Patent Judge |))) | |

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